

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 70.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-006230**Date Inspected:** 10-Apr-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 730**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**Contractor:** Japan Steel Works**Location:** Muroran, Japan**CWI Name:** Chung Fu Kuan**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower, Jacking, and Deviation Saddles**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. Art Peterson was present during the times noted above for observations relative to the work being performed in Fabrication shop #4 and Foundry shop at Japan Steel Works.

**Fabrication Shop #4**

Heat Treat operation of Saddle: Tower Saddle Segment T1-1 (cast and steel section)

The QA Inspector observed that JSW personnel were positioning tower saddle segment T1-1 in preparation for the post weld heat treatment operation. The QA Inspector observed that JSW personnel were in process on loading the tower saddle segment into the furnace.

Machining of Saddle: West Deviation Saddle Segment W2-E2 (cast and steel section)

The QA Inspector observed that west deviation saddle segment W2-E2 is located in Machine Shop #2 to have the final machining performed. The QA Inspector observed that the machining was in-process on this date.

Machining of Saddle: West Deviation Saddle Segment W2-E1 (cast and steel section)

The QA Inspector observed that west deviation saddle segment W2-E1 is being moved to the machine shop to have the lifting lugs machined off. The QA Inspector observed that no work was performed on this date.

Storage of Saddle: Tower Saddle Segment T1-3 (steel section)

The QA Inspector observed that tower saddle segment T1-3 (steel section) is located in fabrication shop #4 for storage until tower saddle segment T1-3 (cast section) is ready for the fit-up operation. The QA Inspector observed

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that no work was performed on this date.

### Grinding Operation of Saddle: West Deviation Saddle Segment W2-E3 (steel section)

The QA Inspector observed that JSW personnel completed the grinding operation on the rib plate's and stem plate's prepared edges (faces of double bevel grooves) of west deviation saddle W2-E3 (steel section). The QA Inspector observed that no work was performed on this date.

### Grinding Operation of Saddle: West Deviation Saddle Segment W2-W1 (steel section)

The QA Inspector observed that JSW personnel were performing the grinding operation on west deviation saddle segment W2-W1 (steel section). The JSW personnel were grinding on the lands of the double bevel groove areas at locations that were inaccessible to machine to meet the mill to bear surface requirement. The QA Inspector observed that the grinding operation was in process at the end of the QA Inspectors' shift.

### Welding operation on Saddle: Tower Saddle Segment T1-2 (cast and steel section)

The QA Inspector observed the partial-joint penetration (PJP) and complete-joint penetration (CJP) groove weld operation on rib (steel section) to rib (cast section) of tower saddle segment T1-2. The QA Inspector observed QC Inspector Mr. Chung Fu Kuan verify prior to and during the welding operation that the preheat temperature of 110 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. T. Watanabe (08-5169) on CJP weld joint no. 8Y-12U-1/-2, Mr. M. Kato (08-5018) on CJP weld joint no. 8Y-12U-2/-3 were in compliance with WPS SJ-3012-4 per the SMAW process in the (1G) flat position. The QA Inspector also observed Mr. Kuan verify prior to and during the welding operation that the preheat temperature of 110 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. H. Mitusmori (81-5438) on PJP weld joint no. 8Y-11U were in compliance with WPS SJ-3012-5 per the FCAW process in the (1G) flat position. The QA Inspector observed that the welding operation was in process at the end of the QA Inspectors' shift.

### Temporary attachments on Saddle: West Deviation Saddle Segment W2-W2 (steel section)

The QA Inspector observed JSW welding personnel Mr. Sainokami (08-5141) welding temporary attachments per the FCAW process in the (3F) vertical position to the edge of the base plate for distortion control prior to the start of the welding operation. The Quality Control Inspector Mr. Chung Fu Kuan informed the QA Inspector that JSW uses their in-house weld procedure specifications to perform the welding of the temporary attachments to the edge of the base plate. The QA Inspector observed that the welding of the temporary attachments to the base plate was in process at the end of the QA Inspectors' shift.

### Grinding operation on Saddle: Tower Saddle Segment T1-3 (cast section)

The QA Inspector observed JSW personnel performing the grinding operation on the edges of the ribs that were built up with weld metal (buttering operation) where the run-off plates were removed by the air-carbon-arc operation. The QA Inspector observed that the grinding operation was in process at the end of the QA Inspectors' shift.

### Foundry Shop:

#### NDT operation of Saddle: West Deviation Saddle Segment W2-W2 (cast section)

The QA Inspector observed NIS NDT personnel Mr. H. Kohama completed the magnetic particle test (MPT) inspection (wet method) on west deviation saddle W2-W2 (cast section) on the as finished surface of level 1 areas on the inside of the trough section of the saddle. The NIS NDT Inspector was in preparation to perform the

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ultrasonic test (UT) inspection on the outside of the trough section of the saddle. The QA Inspector observed that the preparation to perform UT was in process at the end of the QA Inspectors' shift.

### Shaping operation of Saddle: East Saddle E2-E1

The QA Inspector observed that the shaping (scarfing) operation- (removal of cast material on the rough casting) outside of the trough section and rib sections on east saddle E2-E1 was completed on this date. The shaping operation has been completed on both sides of east saddle E2-E1 and JSW personnel were in-process on moving the east saddle to an area to start the grinding operation of the shaped areas.

### Grinding operation of Saddle: East Saddle E2-W1 (cast section)

The QA Inspector observed that JSW personnel completed the grinding operation of the shaped areas on the outside of the east saddle E2-W1 (cast section). The JSW personnel performed the grinding operation to profile the shaped areas on the trough section and stem section of the saddle to a smooth finish prior to the NDT operation. The QA Inspector observed that no work was performed on this date.

### Storage of Saddle: West Deviation Saddle Segment W2-W1 (cast section)

The QA Inspector observed that west deviation saddle W2-W1 (cast section) is located in the storage yard prior to being moved into fabrication shop #4. The QA Inspector observed that no work was performed on west deviation saddle segment W2-W1 (cast section) on this date.

### Grinding operation of Saddle: West Deviation Saddle Segment W2-W3 (cast section)

The QA Inspector observed JSW personnel completed the grinding operation on one side of the areas that had both major and minor weld repairs performed on the trough, stem and rib sections of west deviation saddle W2-W3 (cast section). The QA Inspector observed that no work was performed on west deviation saddle W2-W3 (cast section) until JSW personnel re-position the saddle.

### Rough Machining operation: West Jacking Saddle (cast section)

The QA Inspector observed that the west jacking saddle (cast section) is located in machine shop #4 to have the rough machining performed on the west jacking saddle. The QA Inspector observed the machining of the base plate being performed on this date.

### Buttering operation of Saddle: West Deviation Saddle Segment W2-E3 (cast section)

The QA Inspector observed JSW welding personnel Mr. T. Noboriyama (07-2711) performing the buttering operation-(overlay weld on cast material) inside of the trough section of west deviation saddle segment W2-E3 (cast section). The buttering operation was for the addition of temporary supports and Quality Control Inspector Mr. Chung Fu Kuan informed the QA Inspector that JSW uses their in-house weld procedure specifications to perform the overlay welding. The QA Inspector observed that the buttering operation was in process inside the trough at the end of the QA Inspectors' shift.

Unless otherwise noted, all observations reported on this date appeared to be in general compliance with applicable contract documents.

### Summary of Conversations:

No significant conversations were reported on this date.

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### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy, 510 385-5910, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Peterson, Art	Quality Assurance Inspector
<b>Reviewed By:</b>	Lanz, Joe	QA Reviewer

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